changes, as noted in Tables 2.1 and 2.2, are approved. Revisions adopted by the State which are not consistent with the CWA or implementing federal regulations are discussed later in this letter and are listed in Tables 4.1 and 4.2 of the enclosures.

I. Biocriteria Reference Locations

Table I of 10 CSR 20-7.031 was adopted into the State's water quality standards and contains a listing of biocriteria reference locations. This table is referenced in subsection (4)(Q). These waters serve as the basis for determinations regarding the protection of biological integrity as part of the State's narrative biological criteria. The adoption of this table into State water quality standards is approved.

SECTION III (a): ITEMS EPA IS DISAPPROVING

The following new and revised provisions of 10 CSR 20-7.031 have been identified as being inconsistent with the CWA:

A. Specific Criteria

10 CSR 20-7.031(4) Specific Criteria

wetlands

In its 1993 revisions to its water quality standards, the State modified the application of its existing designated use criteria for classified waters of the State by eliminating the application thereof to wetlands adjacent to classified waters. This revision results in a reduction in the level of protection afforded "waters of the U.S." and is inconsistent with the requirements of the CWA.

As part of its proposed revisions to the State's water quality standards in 1993, the MDNR included water quality standards specific to wetlands. These provisions were consistent with EPA guidance and regulation and represented a major improvement in the manner by which wetlands are afforded protection under state standards. Since the MDNR was proposing to adopt specific water quality standards for wetlands, including specifications for the application of water quality criteria to wetlands, the MDNR proposed to delete the original reference to the application of existing designated use criteria to wetlands adjacent to classified waters. However, the Missouri Clean Water Commission deleted the provisions addressing wetland water quality standards and adopted the proposed deletion of the provision that addressed the application of existing designated use criteria to adjacent wetlands. Consequently, the resultant exclusion of wetlands adjacent to classified waters from the application of existing designated use criteria represents a significant reduction in the level of protection afforded the State's wetlands. This revision is not consistent with the CWA and federal regulations and is hereby disapproved. The State can address this disapproval by restoring the language removed in 1993, clarify that State water quality standards are applicable to all wetlands which are waters of the

U.S. and specify how those standards are to be applied to wetlands. Unless the state takes action within 90 days of receipt of this letter to revise these provisions as recommended, EPA will propose replacement federal water quality standards consistent with section 304(a) of the CWA.

10 CSR 20-7.031 (4)(A)(3) Exceptions to the Application of Specific Criteria to Streams with Natural Concentrations of Dissolved Oxygen Below Criteria

Subsection (4)(A)(3) provides an exception to the application of the State's Specific Criteria to streams when natural upstream concentrations of dissolved oxygen are below the applicable criteria. This provision requires that, under these circumstances, wasteload allocations and permits be designed to meet the existing natural dissolved oxygen concentrations. EPA has issued a policy on the development of site-specific water quality criteria based on natural conditions (Memo from Tudor Davies, November 5,1997). Site-specific water quality criteria for the protection of aquatic life based on natural conditions is not necessarily inconsistent with the CWA or federal regulations, however, State regulations do not include a clear definition of what constitutes "natural" concentrations nor has the State developed or adopted detailed procedures which describe how this provision is to be implemented. The State must provide for the opportunity for EPA review and approval of the adoption of individual site-specific water quality criteria or, alternatively, develop detailed implementation procedures which EPA can review and approve to ensure that these site-specific water quality criteria are protective of the aquatic life uses in each instance they are applied.

This provision was modified as part of the State's 1993 revision of its water quality standards and is, therefore, subject to review and approval by EPA under section 303(c)(3) of the CWA. As presently designed, this provision would not ensure that site-specific water quality criteria based on "natural" conditions would protect aquatic life and does not provide for appropriate review and approval by EPA. The State has not provided any scientific information indicating that criteria based on this provision will protect this designated use as required at 40 C.F.R. §131.6(c). States may adopt criteria as numerical values based on CWA section 304(a) guidance, section 304(a) guidance modified to reflect site-specific conditions or other scientifically defensible methods (40 C.F.R. §131.11(b)(1)). This provision is hereby disapproved. The state may correct this deficiency by revising 10 CSR 20-7.031 (4)(A)(3) to clarify that background concentrations are due only to non-anthropogenic sources. Second, the state may further correct this deficiency by developing and adopting detailed procedures which describe how site-specific criteria are to be based on natural conditions and submit them to EPA for approval consistent with 40 C.F.R. §131.13., or specify that such determinations will result in the formal adoption of site specific water criteria for DO based on natural conditions and submission to EPA for approval. Unless the state takes action within ninety days of receipt of this letter to revise this provision as recommended, EPA will propose ambient dissolved oxygen concentrations under Section 304(a)(1) of the Clean Water Act as replacement federal water quality standards.

10 CSR 20-7.031(4)(B)2.B. Use of Dissolved Metals Criteria for the Drinking Water Supply Use

The State added subsection (4)(B)2.B. to specify that water quality criteria for metals supporting the Drinking Water Supply designated use are to be expressed as dissolved metals. Current EPA guidance expresses water quality criteria for metals as dissolved metals only for the protection of aquatic life. The State's expression of water quality criteria for metals as dissolved metals for the protection of human health through the consumption of both organisms and water is not consistent with EPA guidance and represents a less protective approach. The State has not provided any scientific information indicating that criteria based on this provision will protect this designated use as required at 40 C.F.R. §131.6(c). States may adopt criteria as numerical values based on CWA section 304(a) guidance, section 304(a) guidance modified to reflect site-specific conditions or other scientifically defensible methods (40 C.F.R. §131.11(b)(1)). Since the State provided no supporting scientific information regarding this approach to developing metals criteria for the protection of Drinking Water Supply, this provision is hereby disapproved. The State must either provide information consistent with 40 C.F.R. §131.6(c) or revise these criteria such that they are expressed as total recoverable metals. Unless the state takes action within 90 days of receipt of this letter to revise this provision as recommended, EPA will propose replacement federal numeric criteria for metals consistent with section 304(a) of the CWA.

B. Water Quality Criteria

MDNR's revisions to 10 CSR 20-7.031, Table A added or modified 36 criteria for the protection of aquatic life and human health for 13 pollutants (see enclosure, Table 3) which result in criteria that are not as stringent as EPA guidance criteria under Section 304(a) of the CWA or standards promulgated under the Safe Drinking Water Act (SDWA). Federal regulations at 40 C.F.R. §131.11 require that states adopt criteria which are based on sound scientific rationale and which are based on CWA section 304(a) guidance, CWA section 304(a) guidance modified to reflect site-specific conditions or other scientifically defensible methods. Because the State has adopted water quality criteria which are less stringent than section 304(a) criteria and has not provided adequate scientific justification supporting those criteria, EPA does not believe that the water quality criteria listed in the enclosure as Table 3 are protective of the appropriate designated uses. These criteria are are hereby disapproved.

Protection of Aquatic Life

EPA is disapproving 21 water quality criteria for the protection of aquatic life for cadmium, copper, lead, and zinc. Within 10 CSR 20-7.031, Table A, the State expresses acute and chronic water quality criteria for the protection of aquatic life for these metals based on three designated ranges of ambient water hardness. In addition, the State has developed aquatic life use-specific criteria for cadmium, copper and zinc. Although MDNR did not provide documentation on the methods and assumptions supporting the development of the use-specific

criteria recalculation from earlier standards revisions in the late 1980s. The EPA deduced from the files that MDNR performed a recalculation procedure generating criteria for the protection of aquatic life roughly based on an approach equivalent to EPA's Recalculation Procedure for site-specific criteria development (EPA Water Quality Standards Handbook, 1994). In that approach, aquatic species not resident to Missouri waters and species determined by MDNR to be absent from waters designated under the specific subcategories of aquatic life uses were deleted from the pollutant-specific toxicity database used to calculate water quality criteria. EPA has significant concerns with regard to how MDNR implemented this approach. In general, MDNR deviated from EPA's current site-specific development guidance by failing to correct existing data and add new toxicity data, where appropriate, prior to performing species deletions. Selective species deletions by MDNR, where evident, biases some final criteria calculations. Specifically, with regard to species deletion based on water body type, EPA does not agree with MDNR's convention of deleting data for cladocerans for all stream subcategories. While cladocerans typically reside in more quiescent waters, flowing waters with adequate pooling and slow flowing runs will support cladoceran species. As these conventions are not fully consistent with EPA guidance and are not independently supported by the State, the specific recalculations following these conventions are not scientifically defensible either.

In addition, MDNR addresses the extent to which ambient water hardness affects metals toxicity by expressing its metals criteria as applicable to three ranges of hardness. Criteria assigned to the hardness range of 125 to 200 mg/L (as $CaCO_3$) are developed using a "middle" hardness value of 150 mg/L. Using this approach, these criteria might allow for toxic conditions where ambient hardness is lower than 150 mg/L. This approach will not ensure that aquatic life is protected under all hardness levels.

In the past MDNR has recalculated aquatic life criteria after deleting a number of aquatic species without providing data which justifies those deletions. The State has also relied on existing levels of certain metals as grounds for criteria based on a determination that toxicity-based criteria cannot be achieved in State surface waters. These approaches do not ensure that State water quality criteria protect the designated aquatic life uses and are not consistent with the CWA or its implementing regulations. Criteria must be scientifically defensible and protect the designated uses. Issues regarding attainability must be left to assessments addressing the designated uses themselves.

The aquatic life criteria listed in Table 3 enclosed with this letter are disapproved as inconsistent with 40 C.F.R. §§ 131.6 (b) and (c) and 131.11(b)(1). The State can remedy this disapproval by recalculating water quality criteria insuring that any departures from the approach outlined by EPA in the Water Quality Standards Handbook (1994), the Interim Guidance on Determination and Use of Water-Effect Ratios for Metal, Appendix B, (1994) and other EPA policy updates are well documented and demonstrated to adequately protect aquatic life. Unless the state takes action within ninety days of receipt of this letter to revise this provision as recommended, EPA will propose replacement federal water quality standards consistent with section 304(a) of the CWA.

Human Health Protection-Fish Consumption

The State has added new water quality criteria or revised existing criteria for the protection of human health through the consumption of fish for six pollutants resulting in either the adoption of criteria which are not as stringent as the guidance criteria published by EPA under authority at section 304(a) of the CWA or the removal of existing criteria. Where the State adopted criteria less stringent than EPA guidance criteria, the State did not provide scientific justification demonstrating that these criteria are protective of human health consistent with requirements at 40 C.F.R. §131.6 (b) and 131.11(a) and (b)(1)(iii) and are, therefore, disapproved. For one pollutant group, trihalomethanes, the State deleted the human health criterion without any justification. These criteria are included in Table 3 of the enclosure to this letter. The State can remedy this disapproval by adopting criteria as stringent as those published by EPA or by providing information indicating that alternate criteria protect human health and are scientifically defensible. Unless the state takes action within 90 days of receipt of this letter to revise these criteria, EPA will propose replacement federal water quality standards consistent with section 304(a) of the CWA.

Drinking Water Supply

EPA is also disapproving 9 State water quality criteria for the protection of the State's Drinking Water Supply use which the State has not shown are protective of human health through exposures to contaminants in water and fish. These criteria are also listed in Table 3 of the enclosure to this letter. For dioxin and 1,2-dichloropropane the State adopted water quality criteria to support the Drinking Water Supply use which were less stringent than both the SDWA MCL or EPA's section 304(a) criterion. For 4,4'-DDT, 4,4'-DDE, 4,4'-DDD, bis chloromethyl ether, pentachlorobenzene and 1,2,4,5-tetrachlorobenzene, the State criterion was less stringent than the EPA section 304(a) criterion and there was no MCL promulgated. Federal regulations that established a new drinking water MCL of 80 ug/l for trihalomethanes were promulgated on December 16, 1998. The old MCL was 100 ug/l. Based on this new standard, which states are required to adopt by December 16, 2000, EPA is disapproving the State's revised numeric criteria of 100 ug/l for trihalomethanes. The MDNR can either revise this criterion or prepare appropriate scientific justification. Unless the state takes action within 90 days of receipt of this letter to revise these criteria, EPA will propose replacement federal water quality standards consistent with section 304(a) of the CWA.

C. Designated Cold-Water Sport Fisheries, Table C

In revising its water quality standards, the State modified its classification of six streams as Cold-Water Sport Fisheries as listed in Table C to 10 CSR 20-7.031. For the North Fork White River (Ozark County), South Indian Creek (Newton and McDonald Counties) and Spring Creek (Douglas and Ozark Counties) these modifications involved reducing the stream miles classified as Cold-Water Sport Fishery within Table C. However, within Table H many of these stream miles remain classified as Cold-Water Fishery (CWF). All but one mile of the original 23 miles of North Fork White River classified as CWF in Table H remains classified as CWF.. All

nine miles of those originally designated as CWF for South Indian Creek remain classified as CWF in Table H. None of the original six miles of Spring Creek designated as CWF remain CWF within Table H even though Table C indicates that three miles remain CWF. Without further explanation from the State, EPA will treat all three reductions in coverage of the CWF use as a removal of a designated beneficial use. For those portions of the streams for which the CWF use was eliminated, this constitutes a use removal.

In addition, the State removed Turnback Creek (Taney County), Indian Creek (Franklin and Washington Counties) and Bull Shoals Lake (Ozark County) from Table C. Using Tables G and H, Bull Shoals Lake continues to be designated as CWF, Indian Creek is not designated as CWF and Turnback Creek (Taney County) is no longer classified. Although there is confusion from the inconsistent treatment of these waters within State water quality standards between Tables C, G and H, without further explanation from the State, EPA considers these actions within Table C to constitute a removal of a designated beneficial use.

Use removals are allowed under the CWA and federal regulations if the use or uses are not existing uses and the State has demonstrated that attaining the use is not feasible based on six conditions (40 C.F.R. §131.10(g)). As removing the CWF use will result in the application of less stringent water quality criteria, 40 C.F.R. §131.10(j)(2) requires that the State complete a use attainability analysis (UAA) which supports the change in designated use consistent with the requirements at 40 C.F.R. §131.6(f). No UAA supporting these use changes was submitted by the State and, therefore, EPA disapproves these revisions. The State can address this disapproval by restoring the use eliminated for each water body or by providing an explanation which eliminates the inconsistencies within the standards and justifies the removal of the use consistent with federal regulations. Unless the state takes action within 90 days of receipt of this letter to revise these modifications, EPA will promulgate the upgrading of those waters so as to be consistent with CWA 101(a) uses.

D. Designated Beneficial Uses, Tables G and H

Section 101(a)(2) of the CWA calls for the designation of aquatic life and recreational uses for all waters of the U.S., where attainable. EPA's regulations require the state to perform and submit to EPA for approval a use attainability analysis whenever the state does not designate waters for aquatic life and recreational uses. Without an approvable use attainability analysis for each water not designated for CWA section 101(a)(2) uses, i.e. aquatic life and whole body contact uses, these new or revised use designations must be disapproved. For more discussion of EPA's implementation of the requirements under section 101(a)(2) of the CWA, refer to Section III(b) of this letter.

Modifications to 10 CSR 20-7.031 Tables G and H resulted in the deletion of designated uses uses for a number of classified lakes and stream segments or the removal of classified waters altogether. Tables 4.1 and 4.2 of the enclosures lists those exclusions. Such omissions must be supported by approvable use attainability analyses, consistent with Section 101(a)(2) of the CWA and federal regulations at 40 C.F.R. §§ 131.6(a) and (f).

Because the revisions to 10 CSR 20-7.031 identified in Tables 4.1 and 4.2 of the enclosures to this letter are not consistent with Sections 101(a) and 303(c) of the CWA and EPA's regulations at 40 C.F.R. §§ 131.6 and 131.10, and there is no documentation justifying the removal of designated uses, they are hereby disapproved. The State may correct these deficiencies by designating these waters consistent with the CWA and federal regulations or providing a use attainability analysis consistent with 40 C.F.R. § 131.10 for each missing use designation or stream segment. If not corrected within 90 days, EPA will propose to promulgate federal replacement provisions consistent with 40 C.F.R. § 131.10.

SECTION III (b): EXISTING PROVISIONS FOR WHICH EPA REGION VII IS REQUESTING THE ADMINISTRATOR MAKE A FINDING OF INCONSISTENCY UNDER THE CLEAN WATER ACT

Under the authority of section 303(c)(4) of the CWA, the Administrator may propose and promulgate federal regulations establishing new or revised water quality standards in any case where she determines that a revised or new standard is necessary to meet the requirements of the CWA. We have identified the following existing provisions of 10 CSR 20-7.031 to be inconsistent with the CWA and intend to ask the Administrator to make a determination under CWA section 303(c)(4)(B) that new or revised water quality standards are necessary:

A. Outstanding National Resource Waters

Provisions at 10 CSR 20-7.031(7) of Missouri's water quality standards would allow discharges of "new releases" from publicly-owned waste treatment facilities and mine dewatering water that would result in the water quality of the Outstanding National Resource Water (ONRW) not being maintained and protected (i.e., a lowering of water quality), and, thus, are inconsistent with both federal regulations at 40 C.F.R. § 131.12(a)(3) and the State's own antidegradation policy at 10 CSR 20-7.031(2)(C). Section 131.12(a)(3) or "Tier 3" of the federal Water Quality Standards applies to ONRWs where the ordinary use classifications and supporting criteria may not be sufficient or appropriate. The federal regulation requires water quality to be maintained and protected in ONRWs. In fact, ONRWs are provided the highest level of protection under the antidegradation policy. "EPA interprets this provision [of the federal regulation] to mean no new or increased discharges to ONRWs and no new or increased discharge to tributaries to ONRWs that would result in lower water quality to ONRWs" (Water Quality Standards Handbook: 2nd Edition, August 1984).

In summary, the EPA concludes that the state's prohibition of ". . . new releases to outstanding national resource waters from any source other than publicly-owned waste treatment facilities and mine de-watering . . .", as cited in 10 CSR 20-7.031(7) of Missouri's water quality standards, does not provide an appropriate level of protection for high quality waters constituting ONRWs and therefore is inconsistent with the federal regulation requirement that the water quality is to be maintained and protected in ONRWs (Tier 3 waters) that a State chooses to classify as such. Furthermore, ". . . it is inappropriate to exempt whole classes of activities from standards and thereby invalidate that broader, intended purpose of adopted State water quality

standards." (Memorandum from Tudor Davies "Interpretation of Federal Antidegradation Regulatory Requirements", February 22, 1994, pp. 4-6). Again, EPA's interpretation of the requirements for ONRWs emphasizes restriction of new or increased discharges to such waters. Although this interpretation of the regulation is not the only means of assuring that the water quality will be maintained and protected in waters that State chooses to classify as ONRWs,, the present structure of the State's water quality standards deviates significantly from this level of protection and provides no commensurate level of protection. Without providing a level of protection equivalent to that provided under 40 C.F.R. § 131.12(a)(3), the state antidegradation policy is not approvable. The state may revise this provision by either eliminating this exemption from the application of the State's antidegradation policy or creating a new tier of protected waters equivalent to 40 C.F.R. § 131.12(a)(3). Unless the State makes the proposed changes within 90 days of receipt of this letter, EPA Region VII will be requesting that the Administrator make a finding that the state's exemption of new releases to outstanding national resource waters from publicly-owned waste treatment facilities and mine de-watering water is contrary to the requirements of the CWA, and that a promulgation action to correct this deficiency be initiated.

B. Whole Body Contact Use

Section 101(a)(2) of the CWA establishes as a national goal "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and . . . recreation in and on the water," wherever attainable. This national goal is commonly referred to as the "fishable/swimmable" goal of the Act. Section 303(c)(2)(A) requires water quality standards to "protect the public health and welfare, enhance the quality of water, and serve the purposes of this Act." EPA's regulations at 40 C.F.R Part 131 interpret and implement these provisions by requiring that water quality standards provide for fishable/swimmable uses unless those uses have been shown to be unattainable, effectively creating a rebuttable presumption of attainability. The mechanism in EPA's regulations used to overcome the default designation of fishable/swimmable (i.e., the rebuttable presumption) is a use attainability analysis.

Under 40 C.F.R. §131.10(j), States are required to conduct a use attainability analysis (UAA) whenever the State designates or has designated uses that do not include the uses specified in section 101(a)(2) of the CWA, or when the State wishes to remove a designated use that is specified in section 101(a)(2) of the Act, or adopts subcategories of uses that require less stringent criteria. Uses are considered by EPA to be attainable, at a minimum, if the uses can be achieved (1) when effluent limitations under section 301(b)(1)(A) and (B) and section 306 are imposed on point source dischargers, and (2) when cost effective and reasonable best management practices are imposed on nonpoint source dischargers (40 C.F.R. §131.10(d)). EPA's regulations at 40 C.F.R. §131.10 list grounds upon which to base a finding that attaining the designated use is not feasible, as long as the designated use is not an existing use.

A UAA is defined in 40 CFR 131.3(g) as a "structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors." In a UAA, the physical, chemical and biological factors affecting the attainment of a use are evaluated through a water body survey and assessment. Guidance on

water body survey and assessment techniques is contained in the Technical Support Manual, Volumes I-III: Water Body Surveys and Assessments for Conducting Use Attainability Analyses. Volume I provides information on water bodies in general, Volume II contains information on estuarine systems and Volume III contains information on lake systems. (Volumes I-II, November 1983; Volume III, November 1984). Additional guidance is provided in the Water Quality Standards Handbook: Second Edition (EPA-823-B-94-005, August 1994). Guidance on economic factors affecting the attainment of a use is contained in the Interim Economic Guidance for Water Quality Standards: Workbook (EPA-823-B-95-002, March 1995).

As discussed above, EPA regulations effectively establish a "rebuttable presumption" that "fishable/swimmable" uses are attainable and therefore should apply to a water body unless it is affirmatively demonstrated that such uses are not attainable. EPA adopted this approach in order to help achieve the national goal articulated by Congress that, "wherever attainable," water quality should provide for the "protection and propagation of fish, shellfish and wildlife" and for "recreation in and on the water." While facilitating achievement of Congress' goals, the "rebuttable presumption" approach preserves States' paramount role in establishing water quality standards in weighing any available evidence regarding the attainable uses of a particular water body. The rebuttable presumption approach does not restrict the discretion that States have to determine that "fishable/swimmable" uses are not, in fact, attainable in a particular case. Rather, if the water quality goals articulated by Congress are not to be met in a particular water body, the regulations simply require that such a determination be based upon a credible, "structured scientific assessment" of use attainability (40 C.F.R. §131.3(g)).

EPA believes that the rebuttable presumption policy reflected in these regulations is an essential foundation for effective implementation of the CWA as a whole. The "use" of a water body is the most fundamental articulation of its role in the aquatic and human environments, and all of the water quality protections established by the CWA follow from the water's designated use. If a use lower than "fishable/swimmable" is designated based on inadequate information or superficial analysis, water quality-based protections that might have enabled the water to achieve the goals articulated by Congress in section 101(a) may not be put in place. As a result, the true potential of the water body may never be realized, and a resource highly valued by Congress may be forever lost.

In terms of trying to meet the "fishable" aspect of the "fishable/swimmable" goal of the CWA, all classified waters listed in Missouri's Water Quality Standards are designated as/for either warm water aquatic life (and Human health-fish consumption), cool water fishery, or cold water fishery; however, in trying to meet the "swimmable" side of the goal, such designation has not been consistently applied to those same waters. Since 1984, EPA has expressed its concern with MDNR's approach to classifying surface waters for whole body contact. As captured in a document entitled, "A Whole Body Contact Recreation Use Attainability Analysis" (1984), MDNR's philosophy since 1967 has been to withhold the designation of surface waters for whole body contact unless "requested by the public." Although focusing on smaller streams, this philosophy apparently extends to all waters, including large rivers. The lower portion of the Mississippi River in Missouri and the entire Missouri River are not designated for whole body

contact. Without the necessary use attainability analysis, the State's failure to meet the requirements of section 101(a)(2) of the CWA and its implementing federal regulations has and continues to be a significant deficiency within Missouri's water quality standards program.

EPA seeks, through its oversight under section 303(c) of the Act, to ensure that any state's decision to forgo protection of a water body's potential to support "fishable/swimmable" uses results from an appropriately "structured" analysis of use attainment. The State may correct this deficiency by (1) either revising its use classifications to protect fishable/swimmable uses for all classified waters of the State, or (2) conduct a more thorough analysis of use attainability sufficient to rebut the "rebuttable presumption" reflected in the regulations. Unless the State makes the proposed changes within 90 days of receipt of this letter, EPA Region VII will be requesting that the Administrator make a finding that Missouri's failure to adequately justify a use designation lower than a "fishable/swimmable" for all classified waters of the State that currently lack a whole body contact use designation is contrary to the requirements of the CWA, and that a promulgation action to correct this deficiency be initiated.

SECTION IV: ITEMS FOR ATTENTION FOR 2000 TRIENNIAL REVIEW

A. Bacteriological Indicators for Contact Recreation

As you may be aware, EPA is initiating a national program to protect public health at our nation's beaches. On January 13, 1997, EPA sent a letter to Missouri expressing concern with public health risks posed by contaminated bathing beaches. In keeping with this national priority, the Region strongly encourages Missouri to move to adopt EPA's 1986 updated bacteriological ambient water quality criteria supporting primary contact recreation uses during the next triennial review period. As such, EPA would like to provide assistance to the State during the transition to the 1986 indicators. Additionally, the EPA Action Plan for Beaches and Recreational Waters ("Beach Plan") was published in March of 1999. As stated in the Action Plan for Beaches and Recreational Waters, EPA/600/R-98/079 March 1999:

> The transition to E. coli and enterococci indicators will be a priority for the triennial reviews of water quality standards that will occur in FY2000-2002. Beginning with FY2000, EPA Headquarters and Regional Offices will develop management agreements with the states and tribes that will include commitments to have states and tribes adopt the Ambient Water Quality Criteria for Bacteria–1986. Where a state does not amend its water quality standards to include the 1986 criteria, EPA will act under Section 303(c) of the Clean Water Act to promulgate the criteria with the goal of assuring that the 1986 criteria apply in all states not later than 2003.

As cited earlier, EPA commends the State for adding secondary contact recreational use to the Definitions. However, we note that no criteria was adopted to protect this use. EPA recommends that the State should consider criteria sufficient to support primary contact recreational use for those waters where secondary contact use is designated. This approach to

establishing secondary contact criteria is consistent with the CWA section 101(a)(2) goal. This matter is pertinent to the overall 1986 criteria issue and will merit further discussion during the next triennial review.

B. Biologically-Refined Use Designations

Missouri should also consider more refined and balanced, biologically-based, aquatic life use descriptions in future revisions that reflect the resident biotic community. More precisely defined uses allow water quality standards to be implemented more effectively on a watershed basis, and provide a stronger scientific basis on which to select the most appropriate criteria. In addition, the State's emphasis on "recreationally important fish species" in defining its General warm-water and Limited warm-water fisheries does not it reflect an ecologically-based approach to water quality protection. As is reflected by the statements incorporated into the State standards regarding both biological integrity and biocriteria, the health of an aquatic community is a function of all of the organisms inhabiting it, both vegetative and animal, vertebrate and invertebrate.

C. Protection of Threatened and Endangered Species

As part of the 1993 proposed revisions to the State water quality standards, MDNR included provisions addressing the protection of threatened and endangered species under the State's antidegradation policy and provided for consultation with the U.S. Fish and Wildlife Service (FWS) on potential impacts on listed species. In its adoption of the proposed revisions, the MCWC failed to adopt these provisions. EPA strongly supported MDNR's proposed revisions as they ensured that the State's water quality standards would not jeopardize these federally protected species. These same provisions were also supported by the Missouri Department of Conservation, the Missouri Chapter of American Fisheries Society, and the Sierra Club. Under the Endangered Species Act, EPA is required to consult with the FWS when approving State water quality standards. The proposed revisions would have been important to any determination by EPA that EPA's approval of Missouri's water quality standards would not adversely affect federally-listed species. Further, these proposed revisions recognized that MDNR is in the best position to address FWS concerns during the revision process, thereby avoiding eventual EPA disapproval based on potential impacts to listed species. We urge MDNR to reconsider these or similar provisions as part of the next triennial review.

D. Water Quality Criteria

(1) There are some water quality criteria for priority and non-priority pollutants for which EPA has guidance criteria, but for which Missouri has not chosen to adopt criteria to protect its designated uses. In other instances, Missouri has adopted a value less stringent than the EPA guidance criteria and has provided no justification for these less stringent criteria as is required at 40 C.F.R. §131.(b). Missouri should review the need for criteria for those pollutants that may cause or contribute to the impairment of water quality during its next revision of water quality standards.

(2) Table 5 of the enclosure contains a list of pollutants, which were revised by the State that denote questionably small differences between EPA based criteria and the State's numerical criteria. Although the State's criteria in Table 5 appear to be slightly different, they are, nonetheless, less stringent than EPA's recommended criteria and therefore may or may not be protective of designated uses. Federal regulations at 40 C.F.R. §131.11 require that states adopt criteria which are based on sound scientific rationale and which are based on CWA section 304(a) guidance, CWA section 304(a) guidance modified to reflect site-specific conditions or other scientifically defensible methods. The State should review these criteria and explain why and how these criteria were selected over EPA's recommended criteria, ascertain their effectiveness at protecting applicable designated uses, and make necessary corrections that are be consistent with EPA guidance criteria under Section 304(a) of the CWA..

E. Revisions to 10 CSR 20-7.031, Tables G and H

EPA highly recommends that when the MDNR considers changes to Chapter 7.0331, Tables G and H as part of the upcoming triennial review, that it provide a complete list of all proposed changes and explanations regarding those changes as part of the public record for revising state water quality standards. Examples of changes or revisions that should be clearly identified include: changes or revisions to latitudinal/longitudinal locational information for water bodies; use designation upgrades or downgrades; changes to water body segment numbering; and name changes for water bodies. In this way, the public can understand what changes have been made and provide comments in support or opposition to those proposed changes. MDNR has attempted to provide this information through its public notices of proposed and final standards revisions, but in many instances this information is incomplete and specific changes have been identified without supporting rationale.

EPA also strongly recommends that MDNR revise Tables G and H to specifically identify streams designated as General warm-water and Limited warm-water fisheries in the same manner as cool-water and cold-water fisheries are currently identified. As the water quality standards contain criteria specific to these aquatic life subcategories, it is important to provide this use category information to the public and the regulated community.

We further encourage MDNR to consider the development of a companion map document to Tables G and H showing lakes, stream segment delineations, water body names, county boundaries and nearby city names. The States of Nebraska and Kansas have developed such documents both within and outside their standards regulations and they have proven to be extremely useful to the public, the regulated community and other state and federal agencies in reviewing and working with the State water quality standards.

Finally, EPA notes that there are a small number of modified stream segments and lakes in Tables G and H which were reduced in length and acreage (see Tables 6.1 and 6.2 of the enclosure). The reduction of lake acreage and shortening of a stream segment may constitute a reduction in the protection (i.e., a partial removal of a designated use) that was accorded those waters initially. EPA acknowledges the possibility that the State may have corrected or refined

the size of those waters and that no protection has been lost. However, without explanation, EPA cannot rest on that assumption. Therefore, EPA recommends that MDNR review Table(s) 6.1 and 6.2 of the enclosures, explain why those modifications were made, and make any necessary corrections that are consistent with the goals of the CWA and federal regulations.

F. Site-Specific Water Quality Criteria

Federal regulations at 40 C.F.R. §§131.6 and 131.11 specify that water quality criteria must be scientifically sound and protect the designated uses of water bodies in order for them to receive approval by EPA as required at 40 C.F.R. §131.5. Site-specific water quality criteria can be developed by states consistent with these fundamental requirements. States must clearly describe the scientific basis upon which each site-specific criterion is based as part of its submission to EPA of such revisions to the existing, applicable water quality criteria. The State must also clearly show that the applicable designated use will be protected by the application of these revised or alternate criteria. And, as with any revision to the State's existing standards, these criteria must be adopted by the State and submitted to EPA for approval.

Current approaches to site-specific criteria development and implementation at 10 CSR 20-7.031(4)(A)3., (B)1., (B)5. and (L)3. do not provide for formal adoption into the State's water quality standards or subsequent submission to and approval by EPA. Again, as the development of site-specific criteria constitutes a revision to standards, these criteria must be adopted by the State and submitted to EPA for approval. As an alternative to formal adoption of each site-specific criterion, the State may develop detailed procedures implementing these provisions and submit them to EPA for approval. Without EPA review and approval of a detailed methodology describing how the State develops site-specific criteria, the State must adopt each individual criterion into its standards. The State should consider revisions to Chapter 7 to address this issue or develop detailed procedures describing the development process as part of its next triennial review.

G. Variances

We are generally aware that the Missouri Clean Water Commission has, in the past, awarded variances to the implementation of the State's water quality standards in the context of issuing NPDES permits. Although Missouri's Clean Water Law at section 204.061 provides for the Commission's granting of variances from compliance with sections of that Law, there is no provision within 10 CSR 20-7.031 which provides for the use of variances from water quality standards. Federal regulations at 40 C.F.R. §§131.13 provide for discretionary state adoption of general policies, such as variances, into state standards. However, these policies are subject to EPA review and approval. With the currently planned revisions to 40 C.F.R. §131.21(c), such policies would not become effective for purposes of the CWA until EPA approves them. The authorities described in State statute regarding the use of variances applicable to State water quality standards must be codified in the State's water quality standards regulations, must ensure that designated uses are protected and are subject to EPA review and approval. Without the inclusion of a variance provision within the State standards regulations, implementation of

variances through NPDES permits or TMDLs, for example, would not be consistent with State water quality standards and could lead to disapproval of State-developed TMDLs or non-concurrence with State-developed NPDES permits relying on such variances or could result in a challenge to a permit. We urge the State to adopt variance provisions into 10 CSR 20-7.031 consistent with the authorities described in the Missouri Clean Water Law and federal regulation and guidance.

H. Whole Effluent Toxicity Testing

References to whole effluent toxicity testing and the interpretation of testing results at 10 CSR 20-7.031(1)(A), (1)(E), (1)(Y), (3)(I) and (4)(P) should more definitively describe aspects of these methods, such as test species selection, and should directly reference test methods required by federal regulations at 40 C.F.R. §136.

I. Antidegradation Implementation Procedures

We recognize that MDNR has attempted over the past ten years to develop methods for implementing its antidegradation policy. However, MDNR has yet to propose procedures to the Missouri Clean Water Commission (MCWC). The Federal regulation at 40 C.F.R. § 131.12(a) requires each state to ". . .develop and adopt a statewide antidegradation policy and identify the methods for implementing such policy pursuant to this subpart." While the EPA had previously approved Missouri's antidegradation policy in 1991, and is approving the 1994 revisions to that policy in this letter, the State has not submitted implementation methods. Therefore, the State is not in full compliance with 40 C.F.R. § 131.12(a). The State can remedy this omission by providing EPA with proposed procedures that will address the implementation of the State's Antidegradation Policy. The State should address the means by which it intends to implement its antidegradation policy to protect existing instream uses, waters where the quality exceed levels necessary to support the propagation of fish, shellfish, and wildlife and recreation in and on the water, and high quality waters constituting Outstanding National Resource Waters (ONRW) and Outstanding State Resource Waters (OSRW). Implementation procedures should accomplish two basic tasks: (1) specify how you will identify and define the existing use in a particular water body, and (2) specify the requirements you have in place to maintain and protect an existing use and the water quality needed to protect that existing use. In general, implementation procedures specify the process by which you will meet the requirements of your antidegradation policy, resulting in acceptance, modification, or prohibition of a proposed activity. Implementation procedures apply to state regulation of point and non-point sources of pollution. Therefore, antidegradation procedures should explain how, and to what extent, the State will require implementation of otherwise non-enforceable (voluntary) best management practices (BMP) for non-point source before allowing point source degradation of high quality waters.

J. Protection of Unclassified Waters

Nationally, EPA will be examining the issue of whether or not the states have an appropriate default use in their general criteria for unclassified/unlisted waters, and if so, if that

default use is protective of the existing use or is consistent with the "fishable/swimmable" goal of the CWA. As discussed in Item B under Section III(b) of this letter (Re: Whole Body Contact Use), Section 101(a)(2) of the CWA establishes the national goal as "water quality which provides for the protection and propogation of fish, shellfish, and wildlife. . .and recreation in and on the water wherever attainable (i.e., fishable/swimmable). Furthermore, EPA's regulation at 40 C.F.R. Part 131 interprets and implements these provisions by requiring that water quality standards provide for a default use designation of "fishable/swimmable" unless those uses have been shown through a use attainability analysis to be unattainable. In conclusion, any water is presumed to have a default use designation of "fishable/swimmable" under the rebuttable assumption, and it is the Agency's view that the States must protect unclassified or unlisted waters as well as classified waters for that default use. We note that although unlisted (i.e., unclassified) waters are protected by the general criteria in the Water Quality Standard, there is no clear default use-designation language in Missouri's WQS's for "unclassified waters". This is an issue which EPA will want to discuss during the triennial review.

K. Mixing Zones for Class C Streams and Streams with 7Q10 Low Flows of 0.1 cfs or Less

EPA believes that allowing mixing zones of any size in intermittent or ephemeral streams, or streams with a 7Q10 of 0.1 cfs or less, might not protect the aquatic life communities under all hydrological circumstances. With minimal dilution available in these small streams, the mixing of wastewater with stream water would be inadequate. In such instances, there is no mixing zone. Therefore, chronic aquatic life criteria should be met, with the amount of stream dilution made available through State standards, at the point of entry into the stream. This concept is already recognized within the State's mixing zone regulations for these streams by prohibiting the application of zones of initial dilution. The State should consider future revisions to its mixing zone regulations for these streams such that mixing zones would be prohibited.

L. High Flow Exemption

EPA acknowledges that extremely high flow events might contribute to exceedences of the fecal coliform bacteria criterion for whole body contact. We are aware that several states have attempted to address concerns regarding the application of standards during extremely high flow events. The exemption from the application of Missouri's fecal coliform bacteria criteria at 10 CSR 20-7.031(4)(C) for periods when a stream or lake is affected by stormwater runoff might not ensure that the whole body contact use is adequately protected. Federal regulations at 40 C.F.R. §§131.5(a)(2) and 131.11(a) require that states adopt criteria that protect designated beneficial uses. Of further concern to EPA, Missouri's high flow exemption is broad and qualitative, providing for possibly inappropriate and arbitrary implementation. EPA has already disapproved a more detailed and quantitative high flow exemption in Kansas. We very strongly urge MDNR to review, revise or eliminate this provision as part of your triennial review process. The State should consider other alternatives to addressing high flow issues such as the application of variances or performance of use attainability analyses supporting use changes.

SECTION V: ENDANGERED SPECIES ACT CONSULTATION

EPA initiated discussions with the United States Fish and Wildlife Service in May 2000, as required by the Endangered Species Act, to determine whether this approval action is not likely to jeopardize the existence of federally listed species or result in the adverse modification of designated critical habitat of such species. The Service has expressed concern only about the State's chronic aquatic life use criterion for selenium. Through a national consultation, the Service and EPA have agreed on measures to update selenium criteria, and we anticipate that EPA will be revising its recommended acute and chronic aquatic life use criteria for selenium by January 2002. For now, however, the State's chronic aquatic life use criterion for selenium is approved because it is consistent with EPA's current CWA 304(a) criterion.

Any necessary, subsequent promulgation of federal water quality standards for Missouri by EPA under authority of Section 303(c)(4)(A) and (B) of the CWA will be conducted in accordance with Section 7 of the ESA.

There is much more work to be done by both of our agencies regarding the development of water quality standards which will fully protect the citizens and resources of the state of Missouri. The approved state standards, however, represent significant progress in that continuing effort and I congratulate your staff in its efforts to date. I look forward to working with you to bring the state into full compliance with the CWA, rendering the need for EPA's promulgation of federal water quality standards for Missouri unnecessary.

If you have any questions regarding these comments or the actions taken by EPA, please contact Cheryl A. Crisler, Water Resource Protection Branch Chief, at (913) 551-7820.

Sincerely,

Pradip C. Dalal

for U. Gale Hutton, Director
Water, Wetlands, and Pesticides Division

Enclosures

cc:

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